ISA Lessons Learned Fuel Cycle Informational Exchange

June 18, 2008

Honeywell – Metropolis, IL

Honeywell

Honeywell Metropolis - Overview

Honeywell

- **Metropolis Works Facility (MTW)**
  - Located in Metropolis, Illinois
  - UF6 conversion facility
  - Constructed in 1958
  - Owned/operated by Honeywell International
- **Licensed under 10 CFR Part 40**
  - License issued for a 10-year term; renewed in May 2007
  - Authorized possession 150M lbs. of natural uranium
  - Not licensed to possess enriched uranium
  - Only operating conversion facility in U.S.

NRC Revision to 10 CFR Part 40 – Integrated Safety Analysis (ISA)

Honeywell

Issue

- **NRC may require Part 70, Subpart H ISA**
- **Aimed at new and current licensees**
- **Honeywell MTW specifically addressed**

Honeywell Metropolis (MTW)

- **MTW has an ISA**
- **ISA *modeled* after Part 70**
- **MTW did not commit to Part 70**
  - Level of detail in development
  - Reporting
  - Records

NRC Plan

- **NRC held meeting Feb 22 (public comments)**
- **Issue proposed Rulemaking for comment (typical 1 yr duration)**
- **Issue final rule**
- **Schedule depends on:**
  - Comments received
  - NRC resolution and decision
  - Final rule not expected 2008

Potential Impacts

- **ISA - Re-do or strengthen bases**
- **Equipment/Systems – add defense-in-depth**
- **Reporting – additional reporting to NRC**
- **Records – new records; maintain for life**
- **Procedures – revise and/or add new procedures and training**

Background - 2005/2007 License Renewal

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- Factors affecting differences:
  - 10 years (Sept 11, 2001; industry advancements)
  - 2 operational events (Dec 2003 and April 2004)
- 2 years in the works
- Differences:
  - Safety Determination Report
  - Integrated Safety Analysis
  - Configuration Management
  - Facility Change Process
  - Right of Approval determinations
- ISA
  - Integrated Safety Analysis <u>not</u> required by 10 CFR Part 40
  - MTW submitted ISA in May 2006 as part of license renewal
  - MTW did not commit to meeting full Part 70, Subpart H req'ts.
  - Incorporated as License Condition 18 in renewed license

Background – MTW Integrated Safety Analysis

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- Follows guidance of NUREG-1520
- Risk index method
  - Categorizes accident sequences in terms of likelihood of occurrence and consequence
  - Consequence severity categories and permissible likelihood defined by 10CFR 70.61
- Hazard Identification
  - Hazards Analysis method (NUREG-1513;What if)
  - Evaluates process systems and facilities (physical, radiological or chemical)
  - Documents materials that are:
    - Radioactive, flammable, explosive, toxic, reactive
    - Considers external events
- Plant Features and Procedures (PFAPs)
  - Mitigation and prevention measures
- Management Measures
  - Ensure required availability and reliability

ISA Lessons Learned– Honeywell Metropolis

Honeywell

- Significant ISA implementation costs – approx $6mil
- Extensive Sr. Mgmt. support necessary
  - New demands upon the team (see "what is safety culture")
  - Extensive management measures (procedures, training, configuration control)
  - Previous level of resource won't be adequate
- Efforts to improve procedures and PM instructions
  - Lack of technical guidance, insufficient level of detail
  - Format not up to current standards
- Improved work management needed
  - Strengthen Operations/Maintenance relationships
  - Improve written work packages
  - Prioritize work
  - Increase Operations control of in-plant work

ISA Lessons Learned– (continued)

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- **Dramatic culture change necessary…**
  - **Adopt higher standards (benchmark, get out of the silo)**
  - **Increased ownership by Dept. Mgrs**
  - **Improved individual accountability**
- **Time to realize culture change (Approx. 2 yrs into a 5-10 year change)**
  - **Adapting to new licensing requirements**
  - **Procedure use mindset**
  - **Willingness to embrace higher standards**
    - Increase use of OE and benchmarking
    - Explore opportunities for OE sharing with other conversion facilities

- ***What is Safety Culture?* – that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear safety issues receive the attention warranted by their significance.**

ISA Lessons Learned – (continued)

Honeywell

- Symptoms of a weak Corrective Action Program
  - Viewed as a burden
  - Lack of ownership at Department Manager Level
  - Weak root cause determinations
  - Looking for reasons to avoid using program vs. must use
  - Employees not expected to report all problems
  - Potential process improvements not captured

- Strong Corrective Action Program is a necessity
  - Must plan for success
  - Educate Sr. mgmt. on Corrective Action Program value
  - Use Management Review Committee to elevate expectations
  - Promote ownership at the Dept. Mgr. level

Potential future impacts to ISA

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- Upcoming Challenges
  - Revision to Part 40 – incorporate Part 70 Subpart H/ ISA
  - Learn to view ISA changes as being within scope for new projects (instead of “what’s the holdup??”)
  - Plant aging (how could ISA be affected?)

PLANT AGING

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- **Concern: Plant is aging (50 years)**
  - **What is being done to ensure safety is maintained?**
    - Plant condition is an indicator of plant performance (housekeeping, material degradation, equipment, etc.)
- **What are the potential impacts?**
  - **More controls, procedures, testing , etc**
  - **Additional documentation requirements**
  - **Possible ISA analysis**
  - **Could impact maintenance/replacement decisions**
  - **Could mean operational restrictions**